

Applicant : Satoshi Seo et al.
Serial No. : 10/801,113
Filed : March 16, 2004
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Attorney's Docket No.: 12732-220001 / US7048

Amendments to the Drawings:

The attached replacement sheets of drawings includes corrections to Figs. 1-12g and replaces the original sheets containing all of the figures

The Figures have been corrected as instructed by the Examiner.

Attachments following last page of this Amendment:

Replacement Sheets (10 pages)

REMARKS

Claims 1-28 are pending. Claims 5-8 are withdrawn from consideration.

Claims 1-4 have been amended to clarify the claim language. Support for the clarifying amendment of claims 1-4 is found in the specification, for example, at the section from page 7, line 17 to page 11, line 1.

New claims 25-28 have been added. Support for the new claims is found in the specification, for example, at page 39, lines 20-22.

New corrected drawings have been provided as instructed by the Examiner.

No new matter has been introduced by the amendments.

Rejection under 35 U.S.C. § 103(a)

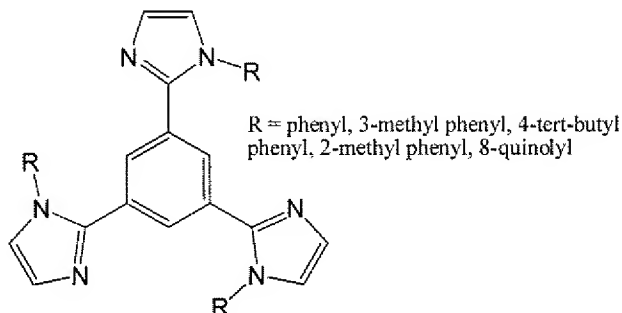
The Examiner has rejected claims 1-4 and 9-24 under 35 U.S.C. 103 (a) as allegedly being obvious over Okada *et al.* (US 2002/0055014) in view of Xie (US 2003/0215667). Applicants respectfully traverse this rejection.

To establish *prima facie* obviousness, the USPTO must satisfy three requirements. First, the prior art relied upon, coupled with the knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or to combine references. *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 58 USPQ2d 1286, 1293 (Fed. Cir. 2001). It is insufficient that the prior art disclose the components of the patented device, either separately or used in other combinations; there must be some teaching, suggestion, or incentive to make the combination made by the inventor. *Northern Telecom v. Datapoint Corp.*, 15 USPQ2d 1321, 1323 (Fed. Cir. 1990).

Second, the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *Amgen, Inc. v. Chugai Pharm. Co.*, 18 USPQ2d 1016, 1023 (Fed. Cir. 1991). Both the first and second requirements must come from the prior art, not applicants' disclosure. *In re Vaack*, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991).

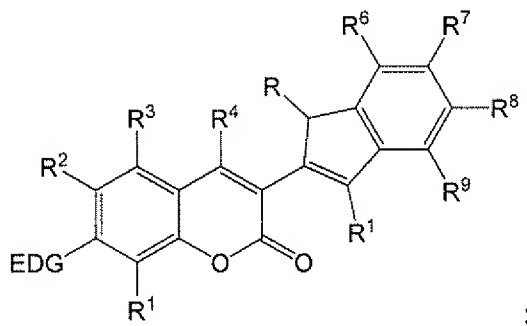
Third, the reference or combination of references must describe or suggest all limitations of the claims. *In re Wilson*, 165 USPQ 494, 496 (CCPA 1970).

Okada discloses a light-emitting device that comprises an organic compound layer, which layer comprises a heterocyclic compound. One heterocyclic compound disclosed by Okada is:



As stated by the Examiner, Okada fails to teach the coumarin derivatives recited by the present claims.

Xie *et al.* discloses electroluminescent devices that comprise a class of anthracene derivatives used as host materials. Xie discloses coumarin derivatives:



where EDG is H, alkyl, aryl, or an electron donating group such as $-OR^{10}$ and $-NR^{11}R^{12}$.

Xie does not disclose any electroluminescent device wherein a heterocyclic compound having a benzimidazole structure is present in the organic compound layer as a host material.

One of ordinary skill in the art would not have been motivated to combine the two cited references because Okada fails to teach the coumarin derivatives recited in the present claims and Xie fails to teach a benzimidazole compound as a host material in an organic layer of an electroluminescent device.

Moreover, even if one were to combine the two references, that combination fails to teach or suggest, or provide any motivation to make the combination made by the inventor (*Northern Telecom v. Datapoint Corp*). As stated by the Examiner, Okada's disclosure of coumarin compounds is silent as to any particular structure for a coumarin compound. Moreover, the Okada generic disclosure of coumarin compounds is made amongst a very large number of other compound classes of widely varying chemical structure. The relevant portion of paragraph [0223] of Okada is reproduced below.

Useful light emitting materials. . . include various metal complexes, typically metal complexes or rare-earth element complexes of benzoxazole, benzimidazole, benzothiazole, styrylbenzene, polyphenyl, diphenylbutadiene, tetraphenylbutadiene, naphthalimide, coumarin, perylene, perinone, oxadiazole, aldazine, pyridine, cyclopentadiene, bisstyrylanthracene, quinacridone, pyrrolopyridine, thiazolopyridine, styrylamine or derivatives of these compounds, aromatic dimethyldyne compounds, 8-quinolinol or derivatives thereof; and polymeric compounds, such as polythiophene, polyphenylene, polyphenylenevinylene, polythienylenevinylene.

Okada provides no prioritization or selection criteria among the large and varied group of disparate compound classes. Okada thus provides no motivation to modify the Okada invention by specifically selecting a coumarin structure from this large group of disclosed compound classes, and further, to seek out a particular species of such a structure, *i.e.*, as disclosed by Xie. Further, with respect to claim 3, no motivation is provided to specifically select from the Xie coumarin structures, a compound wherein EWG, as defined by Xie, is NR¹¹R¹², and not one of the other alternative EWG moieties disclosed by Xie.

Accordingly, *prima facie* obviousness has not been established based on the cited art. Dependent claims 9-24 are also not obvious over the cited art because the light-emitting compounds recited therein are incorporated by reference to independent claims 1-4, which compounds, as discussed above, are not taught or suggested by the cited references.

In view of the above remarks, Applicants submit that claims 1-4 and 9-24 are not obvious over the art cited by the Examiner. Accordingly, Applicants respectfully request that the present rejection under 35 U.S.C. § 103(a) be withdrawn.

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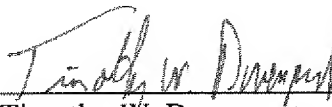
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Applicants submit that all claims are in condition for allowance.

The fee in the amount of \$120 in payment of the one-month extension fee is being paid concurrently herewith on the Electronic Filing System (EFS) by way of Deposit Account authorization. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: December 21, 2006



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